

ABSTRACT

BISTABLE GENETIC TOGGLE SWITCH

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Provided are methods and compositions for regulating gene expression in a cell. The invention provides recombinant genetic toggle switches which contain a first constitutive promoter-regulatory gene operon and a second constitutive promoter-regulatory gene operon. Expression of the regulatory gene from the first operon inhibits expression from the promoter in the second operon, and expression of the regulatory gene from the second operon inhibits expression from the promoter in the first operon. By use of the toggle switch and various switching agents it is possible to reversibly switch the expression of a gene of interest between a stable "on" state and stable "off" state or vice versa via transient exposure to a switching agent.

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